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The Canadian Lumber Industry: Recent Trends

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The Canadian Lumber Industry: Recent Trends

Daniel Dufour, Small Business and Special Surveys Division

Summary

Faced with various trade and economic pressures during recent years, Canada's lumber industry has restructured and remained profitable. As part of its restructuring, the industry lost thousands of jobs which produced substantial gains in productivity. These gains have helped it maintain positive profit margins somewhat comparable, on average, to those reported in the manufacturing sector during the 1999 to 2005 period.

The trade and economic challenges faced by the industry during this period were many and included: the 1996-2001 Canada-United States Softwood Lumber Agreement, the American anti-dumping and countervailing duties slapped on the industry from 2002 to 2006, a rise in energy and raw material prices, a decline in lumber prices and a higher exchange rate for the Canadian dollar.

During the course of the Softwood Lumber Agreement, the general performance of the lumber industry was somewhat comparable to the rest of the manufacturing sector, except for labour productivity. It recorded profit margins similar to those of all manufacturing industries. In addition, its volume of production and the number of jobs kept rising until 2000. However, total hours worked declined resulting in above average labour productivity growth. The end of the Softwood Lumber Agreement in 2001 was followed by the imposition of anti-dumping and countervailing duties in 2002. This was a marked turning point for the industry.

Weakening prices, first seen in 1999, continued until 2006 when they reached their lowest levels since 1992. On average, prices fell 4.4% a year from 1999 to 2006. This was the result of several factors including stiffer competition on international markets, production overcapacity in the industry, the imposition of anti-dumping and countervailing duties on lumber exports to the United States and recent strengthening of the Canadian dollar relative to the US dollar.

Meanwhile, production volumes grew until 2004 due in part to strong demand in domestic and US housing markets, before contracting in 2005 and 2006. As a consequence, the value of lumber industry manufacturing shipments fell 14.9% in 2005 and 17.5% in 2006 to reach $11.9 billion. This was the lowest level in 14 years. However, despite relatively steady production volume during the period, employment fell markedly starting in 2001. This intensified productivity gains which started before 2000. From 2001 to 2005, labour productivity of the sawmills and wood preservation industry, of which the lumber industry represents 89% of shipments, rose by 5.8% per year on average, close to 5 times faster than the 1.2% gain in the manufacturing sector.

From 1999 to 2005, the sawmills and wood preservation industry had an average profit margin ratio of 6.0% compared with 6.4% for all manufacturing industries, thanks in part to an exceptional 2004 profitable year. The return on equity stood at 8.9% on average compared to 8.8% for the manufacturing sector.

In 2006, a new agreement with the United States was reached on wood exports, combined with an agreement to reimburse most of the duties collected since 2002 and the establishment of a new base price over which Canadian exporters will have to pay duties. Time will tell how this new accord and other factors will influence the Canadian lumber industry over the years.

This study examines recent developments in the Canadian lumber industry. It analyzes trends in shipments, prices, production, exports, employment, productivity, innovation, investments and financial results from 1995 to 2006.

Defining the wood industry

The wood industry is primarily engaged in manufacturing products from wood. It comprises establishments engaged in sawing logs into lumber and similar products, or preserving these products; making products that improve the natural characteristics of wood, by making veneers, plywood, reconstituted wood panel products or engineered wood assemblies; and making a diverse range of wood products, such as millwork.

To measure the scope of the wood industry activities, the North American Industry Classification System (NAICS) divides this industry into three main groups, with each one made up of sub-groups:

- Sawmills and Wood Preservation (NAICS 3211):
  - Sawmills (except Shingle and Shake Mills) (NAICS 321111)
  - Shingle and Shake Mills (NAICS 321112)
  - Wood Preservation (NAICS 321114)
- Veneer, Plywood and Engineered Wood Product Manufacturing (NAICS 3212)
- Other Wood Product Manufacturing (NAICS 3219)

For the purposes of this study, the Sawmills (except Shingle and Shake Mills) industry (NAICS 321111) is considered to be the lumber industry. It comprises establishments engaged primarily in manufacturing boards, dimension lumber, timber, poles and ties from logs and bolts.

On several occasions, the article will cite trends (employment, innovation, productivity) in the sawmills and wood preservation industry (NAICS 3211) whose manufacturing shipments totalled $13.5 billion in 2006. Of this amount, $11.9 billion, or 89%, can be attributed to the lumber industry. The lumber industry also accounts for the vast majority (96%) of the sawmills and wood preservation industry's exports.

Moreover, profit margin and return on equity data are compiled on an enterprise basis. The classification of enterprises differs from that of establishments because an enterprise may own establishments that belong to different activity sectors. More details on this topic can be found in this study (see textbox entitled "Are financial and production data universes comparable for the lumber industry?").

Relative importance of the lumber industry

The Canadian sawmills and wood preservation industry contributed nearly $7.6 billion to the national Gross Domestic Product (GDP) in 2006. This is the equivalent of 4.4% of the manufacturing sector's GDP, and 0.7% of the entire Canadian economy. This industry is also a key player in the export market, accounting for more than 4% of total Canadian merchandise exports.

In 2006, the sawmills and wood preservation industry sustained more than 54,400 direct jobs across Canada. In addition to direct jobs, it generated significant economic benefits through the

support of indirect jobs. It is estimated that an additional 90,600 jobs in other industries were related to the wood industry.[1] So altogether the industry provides over 145,000 direct and indirect jobs.

The sawmills and wood preservation industry is also at the heart of the forest industry since it uses primarily Canadian inputs. In fact, its raw material is logs harvested by logging companies. This sector of activity directly employed close to 60,000 workers in 2006. In addition, the wood chips produced by the lumber industry are used by the pulp and paper sector which employed roughly 87,000 workers in 2006. Thus, more generally, the wood industry plays a key role in the development of more than 300 rural and remote communities, from which at least 50% of its revenue is generated.[2] It is, therefore, an essential component in the economic prosperity of certain regions.

Indeed, Canada is known as a country with many natural resources. It has up to 10% of the world's forest coverage, 25% of the world's wetlands, and more than 20% of the world's fresh water.[3] In 2005, Canada was the second largest producer of lumber in the world, with 16% of worldwide production, and the top world exporter with 30% of the international lumber trade.[4] Canada sells its forestry products to over 100 countries; its biggest export markets are the United States, the European Union and Japan.

Not surprisingly, the health of the Canadian wood industry nowadays is a key concern for many Canadians. This industry has to deal with many basic trends such as market globalization, acceleration of technological innovation and compliance with the principles of sustainable development. As if this were not enough, it must also face protectionist pressure from its main trading partner, the US, a strong Canadian dollar, an increase in energy and raw material costs, as well as a drop in the price of lumber.

Value of manufacturing shipments free-falling

The value of manufacturing shipments in the lumber industry recorded back-to-back declines in 2005 and 2006 following a brief recovery in 2004 when the demand for wood products was strong and production was in full swing.

In 2006, lumber shipments declined by 17.5% to $11.9 billion, or $2.5 billion less than the previous year and well below the recovery level of nearly $17 billion in 2004. In 2005, they had declined 14.9%. The 2006 level was the lowest in 14 years.

After the 2004 peak, the sawmills and wood preservation industry maintained its production volume at around 80 million cubic metres of wood. This was partly to meet the demand, but also to process excess supplies that followed forest fires and insect epidemics in western Canada and that required wood to be harvested early.

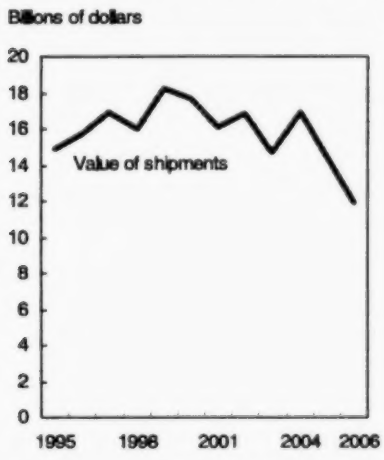
Hence, the big declines in the value of shipments were due to a great extent to falling prices, which plunged to levels not seen since 1992. The price of lumber and ties fell by 10.5% from 2004 to 2005 and by 7.7% the following year.

Prices dropped because of various factors occurring either concurrently or at different points in time during the period. For example, these factors include the slowdown in housing starts in Canada

1. These estimates are based on the 2003 national Input-Output multipliers produced by the Industry Accounts Division of Statistics Canada. They are considered to be relatively stable over time.
2. See *The State of Canada's Forests*, 2004-2005 and 2005-2006 editions, Natural Resources Canada, http://cfs.nrcan.gc.ca/sof/latest_e.html (accessed on April 10, 2006).
3. Ibid.
4. See the statistical data bank of the United Nations' Food and Agriculture Organization http://faostat.fao.org/site/381/default.aspx (accessed on April 13, 2006).

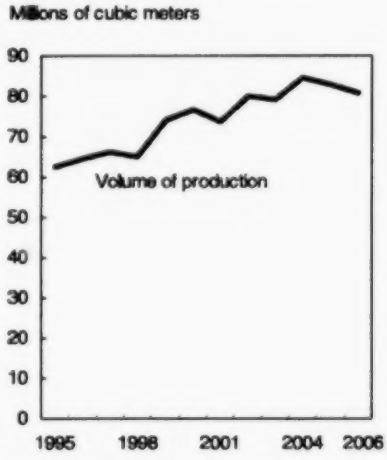
since 2004, the deep drop in the housing sector in the US in 2006, a strengthening Canadian dollar relative to its American counterpart since 2003, overcapacity production to deal with excess supplies since early 2000 and the imposition of anti-dumping and countervailing duties on exports to the United States from 2002 to 2006.

Chart 1
The value of lumber industry shipments on the decline since 1999...



Source: Statistics Canada, CANSIM table 304-0014.

Chart 2
... while production volume slackened only after 2004



Source: Statistics Canada, CANSIM table 303-0009.

Chart 3 The price of lumber and ties experience strong fluctuations which follow a weakening trend

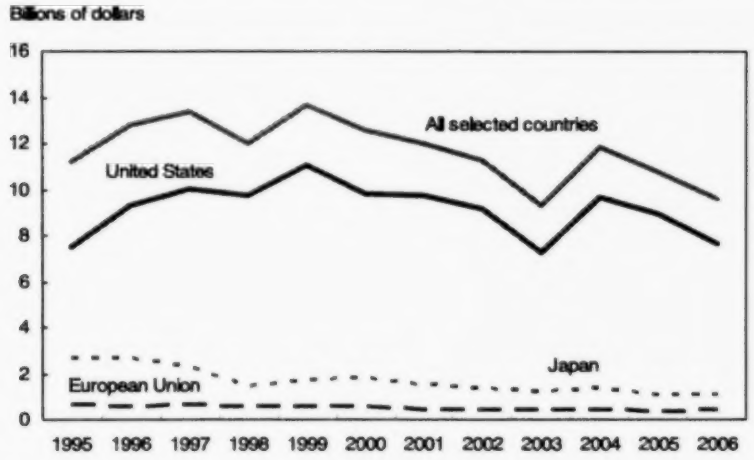
Source: Statistics Canada, CANSIM table 329-0042.

Weaker American lumber exports lead to a drop in shipments

The Canadian lumber industry is largely dependent on its exports to foreign markets, which make up around 80% of its production. In 2006, the value of its national lumber exports totalled $9.6 billion, 80% of which were shipped to the United States, by far its main foreign market. An additional 11% went to Japan, close to 5% to the European Union and the rest to other countries.

Fluctuations in Canadian lumber exports are closely linked to the fluctuations of exports intended for the American market, while the other markets have little impact on the national picture.

Chart 4 Slowdown of Canadian lumber exports to US



Source: Statistics Canada, special tabulation, International Trade Division.

The drop in the value of Canadian lumber industry shipments can in large part be explained by the significant decrease in the value of exports to the United States in the past few years. After strong growth of 5.1% per year from 1995 to 1999, the value of national lumber exports fell a sharp 4.9% per year from 2000 to 2006, despite the recovery seen in 2004. It should be noted that the American housing construction market, a key lumber consumer, experienced a marked slowdown in 2006.

Nevertheless, from 2004 to 2006, when the value of Canadian lumber industry exports plunged by 19.4%, the volume of exports alone fell by only 4.9%. Therefore, the drop in the value of exports after 2004 was mainly due to a drop in prices.

One factor that affected prices was the continuous strengthening of the Canadian dollar. Indeed, the sales price of Canadian lumber on the international markets is negotiated in American dollars. Canadian exporters cannot raise their prices to offset an exchange rate that works against them. Compared to the American dollar, the Canadian dollar strengthened on average by 7.4% from 2004 to 2005, and by 6.8% from 2005 to 2006.

The drop in the export volume especially in 2006 can be especially associated with the weaker demand for lumber in the United States. However, it should be noted that this drop was primarily felt

in Quebec and Ontario, whereas the other provinces maintained rather stable lumber export volumes from 2004 to 2006.

The drop in Quebec may also be associated with a decrease in its raw material supply following re-assessment of its annual allowable cut. By contrast, British Columbia saw its annual allowable cut increase in the past few years due to numerous forest fires in that province and a severe epidemic of beetle-infested wood, necessitating early harvest of the affected trees. The resulting overcapacity in production may have contributed to lower lumber prices and, indirectly, the value of exports.

The Canadian lumber industry has not diversified its export markets in the past decade which would have helped prevent dependence on the American market. In fact, the other two large foreign markets discussed below reduced their purchases from Canada.

The Asia-Pacific region is the second-largest export market for Canadian lumber, with Japan by far the leading market in the region. Exports to Japan rose substantially until the middle of the last decade. The 1997 economic crisis in Asia caused a sharp decline in their lumber imports from Canada. Although the Asian markets have since recovered, the Canadian lumber industry has still not managed to recover a market share comparable to the previous one. Thus, while the value of exports of Canadian lumber to Japan amounted to $2.7 billion in 1995, it was less than $1.1 billion in 2006. Exports of Canadian lumber to the Asian markets amounted to $1.3 billion in 2006.

Europe is the third largest market for Canadian lumber exports, much of which goes to the United Kingdom (22%), the Netherlands (17%) and Germany (14%). However, there was a major slump in Canadian lumber exports to Europe during the last decade.

While the value of lumber exports to Europe totalled $651 million in 1995, representing 5.8% of national lumber exports, it was only $436 million in 2006, accounting for 4.6% of national exports.

The cause of this decline may be the fact that several wood-producing countries that joined the European Union in the past decade have made Europe nearly self-sufficient in terms of the supply of forestry products.

British Columbia recovers its share of national exports

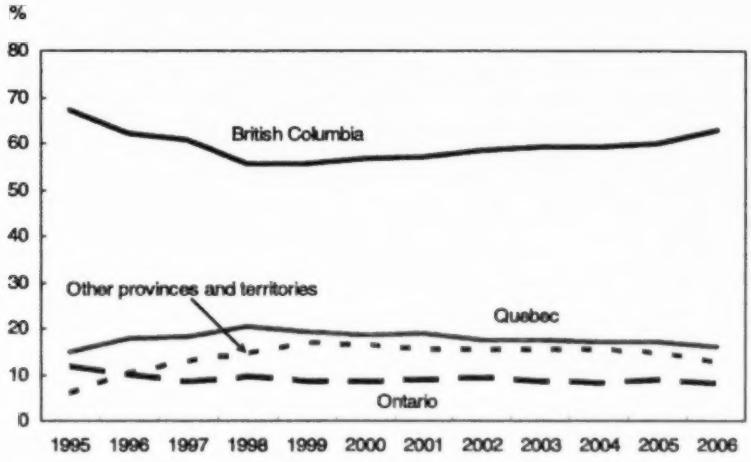
In 2006, British Columbia had the largest share of lumber exports (63%) followed by Quebec (16%), Ontario (8%) and the other provinces (13%).

From 1995 to 1998, British Columbia's share of national exports fell from 67% to 56%. Since 1998, its share had rebounded to around 60%, in part due to the excess supplies resulting from the beetle-infested wood epidemic.

Quebec saw its market share fall, from 20% in 1998 to 16% in 2006, in part due to the reduction in its authorized raw material supply. The export share of the other provinces remained relatively stable during the last decade.

The regional distribution of national lumber exports is strongly influenced by fluctuations in the demand from the primary importing countries. For example, fluctuations in the demand from the Asian market will affect British Columbia producers more, while fluctuations in Europe have a more direct impact on sawmills in Eastern Canada.

Chart 5 British Columbia recovers its share of national exports



Source: Statistics Canada, Manufacturing, Construction and Energy Division.

Furthermore, certain Canadian provinces depend more on exports than others. This is true for British Columbia and the Atlantic provinces, whose exports represented 80% and 71%, respectively, of total shipments in 2006. These proportions were less for Ontario (54%), the Prairie provinces (52%), and Quebec (47%).

Significant job losses in the industry

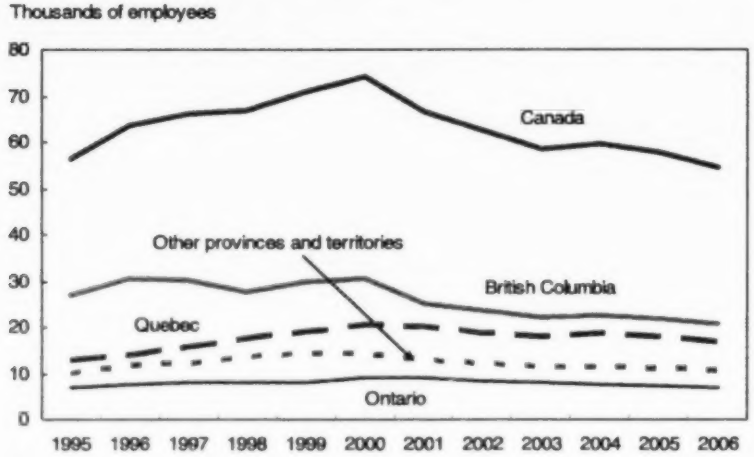
Following a 31% rise in employment in the Canadian sawmills and wood preservation industry from 1995 to 2000, employment plunged 27% from 2000 to 2006.

Employment fell from an all-time high of 74,145 jobs in 2000 to 54,454 jobs in 2006. This decline was for the most part due to plant closures stemming from industry restructuring. These losses were mainly due to a reduction of jobs in the lumber industry which represented almost 89% of sawmills and wood preservation industry shipments.

Direct jobs are found in all regions but concentrated mainly in three provinces: British Columbia (38%), Quebec (30%) and Ontario (12%).

Employment in all manufacturing industries declined by 1.0% from 2005 to 2006. In the sawmills and wood preservation industry, it declined 5.9%, from 57,868 employees in 2005 to 54,454 employees in 2006. The job losses were especially marked in Ontario (-8.9%), Quebec (-7.5%) and British Columbia (-5.3%).

Chart 6 The number of employees in the Canadian sawmills and wood preservation industry on the decline since 2000



Source: Statistics Canada, CANSIM table 281-0024.

Notable increase in productivity

Starting in 2001, the lumber industry accelerated its restructuring which resulted in substantial productivity gains.

From 1997 to 2001, that is, throughout most of the five-year Canada-US Softwood Lumber Agreement, labour productivity in sawmills and wood preservation industry increased 2 times faster than in the entire manufacturing sector (6.2% per year on average compared to 3.1%). Labour productivity is defined here as the industry's value added divided by total number of hours worked. The stronger performance of the sawmills and wood preservation industry during this period can be explained by the fact that this industry was able to increase its output at a rate similar to that of the manufacturing sector while reducing total hours worked contrary to other manufacturing industries.

Reductions in hours worked in the sawmills and wood preservation industry from 1997 to 2001 (-3.7% per year on average) were achieved mainly by reducing or shortening the number of shifts. Hence, no major layoffs occurred from 1997 to 2000, but employment started declining in 2001. This was the first phase in the industry's restructuring.

Productivity increases intensified after 2001. This coincided with the beginning of the imposition of countervailing and anti-dumping duties on lumber exports to the United States. From 2001 to 2005, labour productivity rose by 5.8% per year on average, close to 5 times faster than the 1.2% gain in the manufacturing sector. These gains came from a sustained increase in the industry output (+3.8% per year on average) while total hours worked dropped by an average 1.9% annually. During this second restructuring phase however, employment in the sawmills and wood

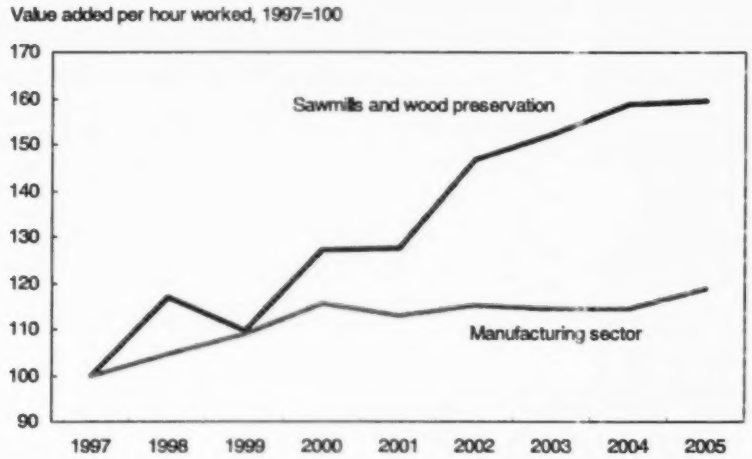
preservation industry declined 3.5% a year on average compared to a 1.7% decline for the manufacturing sector as a whole. This picture is consistent with the hypothesis that such major productivity gains were achieved with the closure of plants that were likely the least efficient. Indeed, labour productivity in an industry generally improves with the closure of its least productive plants, which is usually the case when an industry undergoes restructuring.

The second phase of this restructuring can be divided into two periods: a production increase from 2001 to 2004 and a drop in production from 2004 to 2005.

From 2001 to 2004, the increase in productivity can be explained, for the most part, by the effective use of existing facilities and plant closures,[5] rather than by the addition of new, better-performing equipment. In fact, investments in the sawmills and wood preservation industry were, on average, almost 28% lower from 2001 to 2004 than they were from the earlier period 1997 to 2000. Also, the wood product manufacturing capacity utilization rate climbed from a level of 82.0% in 2001 to 92.1% in 2004. Value added of the sawmills and wood preservation industry increased 5.5% per year on average from 2001 to 2004 while total hours worked dropped by 2.0% on average each year.

The situation was different from 2004 to 2005. While closure of plants continued,[6] productivity gains were negligible. Both production and hours worked decreased at about the same rate.

Chart 7 The value added per hour worked rose sharply in the Canadian sawmills and wood preservation industry



Source: Statistics Canada, special tabulation, Income and Expenditure Accounts Division.

5. See *The State of Canada's Forests*, 2004-2005 and 2005-2006 editions, Natural Resources Canada, http://cfs.nrcan.gc.ca/sof/latest_e.html (accessed on April 10, 2006).
6. Ibid.

Innovation is loosing ground

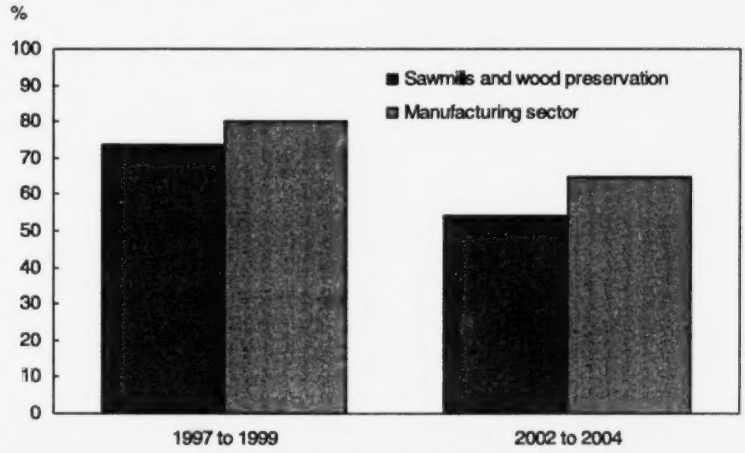
Since the lumber industry is essentially an export industry, its prosperity depends partly on its ability to put new products on the market and to develop new manufacturing processes to reduce its production costs in order to be able to compete with the other exporting countries on the international markets. However, the 1999 and 2005 Surveys of Innovation revealed that the sawmills and wood preservation industry is losing ground in innovation compared to its manufacturing sector counterparts.

Thus, while nearly half (48%) of manufacturers declared having introduced new products or significantly improved products from 2002 to 2004 (years covered by the 2005 survey), only one out of four (27%) in the sawmills and wood preservation industry reported so, putting the industry at the bottom of the pack. The corresponding percentages for the years 1997 to 1999 (years covered by the 1999 survey) were 68% for the entire manufacturing sector and 51% for the sawmills and wood preservation industry.

With respect to innovation rates in new manufacturing processes or significant improvement of these processes, the sawmills and wood preservation industry was just below the average rate for the manufacturing sector from 2002 to 2004 (46% compared to 50%). Again, this was a more marked decline for this industry since, in the 1999 survey, the industry was in the middle of the manufacturing sector (65%).

Overall, there was a difference of 11 percentage points between the sawmills and wood preservation industry (54%) and all manufacturing sector industries (65%) in the innovation rate for products and processes from 2002 to 2004. This difference was 6 percentage points for the years 1997 to 1999. This lag in the sawmills and wood preservation industry compared to other manufacturing industries was probably an indicator of the specific problems it has faced in the recent years.

Chart 8 Sawmills and wood preservation industry loosing ground in innovation rates compared to all manufacturing industries



Source: Statistics Canada, Science, Innovation and Electronic Information Division.

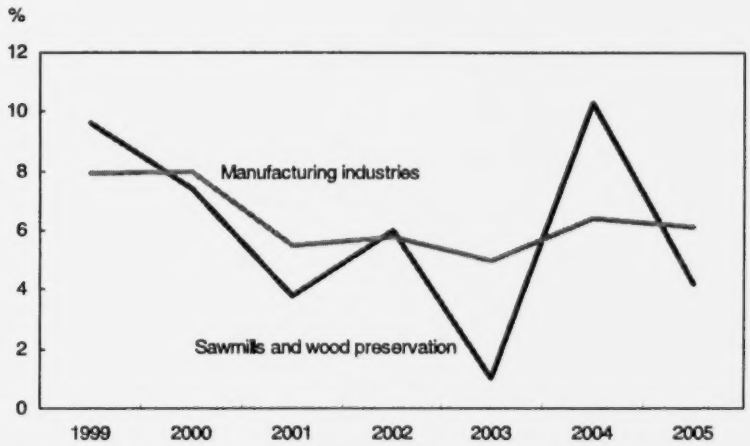
At the regional level, the proportion of industries in the sawmills and wood preservation sector that implemented innovations from 2002 to 2004 was higher in the Western provinces[7] (67%) than in the Eastern provinces, with 52% for New Brunswick, 49% for Quebec, 48% for Nova Scotia and 39% for Ontario.

Sawmills and wood preservation industry's profitability somewhat comparable to other manufacturing industries

Faced by various trade and economic shocks during recent years, Canada's lumber industry has restructured and remained profitable.[8] Indeed, when measured by the profit margin and the return on equity, the ratios for the sawmills and wood preservation industry was among the average level or slightly below the average compared to other manufacturing industries.

From 1999 to 2005, the sawmills and wood preservation industry had an average profit margin ratio of 6.0% compared with 6.4% for all manufacturing industries. This performance was due, among other factors, to substantial productivity gains and to the fact that the industry has been able to capitalize on the temporary surge in demand and prices in 2004, when the profit margin climbed to a record 10.3%.

Chart 9 The sawmills and wood preservation industry had profit margins somewhat comparable to those of the manufacturing sector



Source: Statistics Canada, special tabulations, Industrial Organisation and Finance Division.

Furthermore, from 1999 to 2005, the return on equity for the sawmills and wood preservation industry stood at 8.9% on average compared to 8.8% for the manufacturing sector as a whole. This ratio is a measure of the return obtained by investors and is another indicator of profitability.

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7. Including Manitoba, Saskatchewan, Alberta, British Columbia, the Yukon Territory, the Northwest Territories and Nunavut.
8. See textbox entitled "Are financial and production data universes comparable for the lumber industry?"

The profit margins and return on equity made by an industry depend mostly on its profits from the sale of its products. The sawmills and wood preservation industry made a record operating profit of $2.8 billion in 2004, which then plunged by 70.5% to $833 million in 2005.

Net profits also dropped by 80.7%, from $2.1 billion in 2004 to $409 million in 2005. This decline in profits in 2005 may be the combined result of a strong Canadian dollar, a rise in energy and production input costs, and a drop in the price of lumber.

If the annual trend for 2006 was to follow the trend observed based on 2006 quarterly data for which there are preliminary financial statistics, operating revenues should fall by about 9% below the 2005 results. Moreover, according to the same financial preliminary statistics, net profits should increase by about 4.5%, which can partly be explained by the resolution of the lumber dispute with the United States.

Indeed, the Softwood Lumber Agreement signed on September 12, 2006, confirms the revocation of the countervailing and antidumping duty orders and the return to Canadian softwood lumber exporters of the vast majority of the duties collected by the United States since 2002, representing over US$4.5 billion.

The Agreement also stipulates that Canadian softwood lumber exporters will pay, from then on, an export charge when the price of lumber for the American market is at or below US$355 per thousand board feet. In addition, through this negotiated solution, each province will be allocated a share of exports based on its historic share of the American market. This mechanism aims at preserving Canada's share of the American softwood lumber market. The Agreement will be for a term of seven years with an option to renew for two additional years. Time will tell how this new accord and other factors will influence the Canadian lumber industry over the years.

Are financial and production data universes comparable for the lumber industry?

Given that the establishments covered by financial statistics (collected at the enterprise level) differ somewhat from those covered by productions statistics (collected at the plant level), more research was done to confirm the conclusions regarding profit margin and return on equity. This research supported these conclusions.

In general, an enterprise consists of one or more (a family of) companies affiliated through common ownership which may own establishments that belong to different industries. Hence, profit margin and return on equity data presented here are calculated for those enterprises where a majority of their activities falls in the sawmills and wood preservation industry (NAICS 3211). The establishments that are common to both universes (establishments belonging to enterprises classified as NAICS 3211 and establishments classified directly in NAICS 321111) represented 60% of value added generated by these two universes in 2005. Given that profits are a residual measure that is usually more sensitive to variation in the number and the size of the enterprises for which it is calculated, it was important to validate the conclusions regarding profit margin and return on equity.

First, it was found that financial ratios for enterprises in NAICS 3211 were not "pulled up" by establishments that are not sawmills but belong to enterprises classified in NAICS 3211—because most of their production is generated in their sawmills establishments. In fact, almost all the establishments that are not sawmills but belong to enterprises classified in NAICS 3211 are involved in paper manufacturing (NAICS 322) and enterprises mostly involved in paper manufacturing registered lower financial ratios than those classified in NAICS 3211. This suggests that financial ratios in NAICS 3211 enterprises would be higher if it was not for their paper manufacturing activities, hence supporting conclusions regarding profit margin and return on equity in the softwood lumber industry.

Second, based on 2005 micro-data, it was found that enterprises only involved in the sawmills sector (NAICS 321111) and which are referred to as "single industry enterprises" performed similarly to those enterprises involved mainly in the sawmills sector but having also activities in other sectors (multi-industry enterprises). This finding also supports conclusions regarding profit margin and return on equity in the softwood lumber industry.